

Focus area Oncology II	
Module code	mlsOncologyII-01a
Abbreviated title	Oncology II
Module components	Lab seminar, lab practical, joint seminar of all focus areas
When	Semester 3
Module coordinator/ Organiser	J.-P. Weimer (Gynaecology)
Lecturers	N. Arnold, J.-P. Weimer (Gynaecology), L. Lenk (Pediatrics), A. Trauzold (General and thoracic Surgery), S. Sebens (IET); M. Peipp, T. Valerius (Med. Department II); principal investigators of research groups working on research topics of focus areas (joint seminars)
Contact hours	Practical 9 CH Lab seminar 1 CH Joint seminar 1 CH
Workload	<u>Lab practical: 240 h</u> Attendance time 100 h, preparation 60 h, revision 80 h <u>Lab seminar: 60 h</u> Attendance time 14 h, preparation 26 h, revision 20 h <u>Joint seminar:</u> Attendance time 14 h, preparation 10 h, revision 6 h
Total: 330 h	
Credit points	11 (practical 8 CP, lab seminar 2 CP, joint seminar 1 CP)
Requirements	<i>Oncology I</i> passed
Expected outcome	<p><u>Knowledge:</u> Students</p> <ul style="list-style-type: none"> - have an in-depth understanding of physiological and molecular/cell biological processes which influence malignant diseases - understand lab techniques for oncological research described in the literature and can explain essential methods - have in-depth knowledge of the experiments conducted during the practical. <p><u>Skills:</u> Students</p> <ul style="list-style-type: none"> - can conduct the different steps of their lab experiments and explain them - are able to perform quality control measures for the results obtained - can analyse the results and put them into relation to the research area. <p><u>Competences:</u> Students</p> <ul style="list-style-type: none"> - can plan experiments, analyse the data and interpret results gained - can reflect their own work critically and integrate new results adequately - can familiarize themselves with a new topic and develop research approaches - are aware of the connections between the topics of the different focus areas, can link and explain them.
Content	<p><u>Seminar:</u> Planning and preparation of a project in the seminar by literature research and discussions with fellow students and lecturers.</p> <p>Discussion of method papers: sequencing techniques, immunohistochemistry, fluorescence in-situ hybridisation; comparative genome hybridisation on arrays; blotting techniques.</p> <p><u>Practical:</u> Performance of experiments for a lab project on topics such as effect of oncogenes, tumour suppressor genes, development of mutations; signal</p>

	transduction in cells and analysis of results. Preparation of tumour cells (RNA/DNA/proteins) for their application in various lab techniques. <u>Joint seminar</u> : Joint discussion of papers relevant for all focus areas.
Module evaluation/ exam	Graded Scientific essay with oral presentation
Media used	PPT presentations, lab instructions, lab experiments.
Literature	Pecorino L, Molecular Biology of Cancer Mechanisms, Targets, and Therapeutics (OUP 4 th edition, 2016) Weinberg RA, The biology of Cancer (Garland Publishing 2 nd revised edition, 2013) Current original publications and reviews